

1. (Currently amended) A speech-enabled internet website operating on a server computing system and comprising:

a receiving routine executing on the server computing system for receiving speech data associated with a user speech-based query, said speech data being characterized by a data content that is substantially inadequate by itself for permitting recognition of words articulated in said speech query; and

a speech recognition routine executing on the server computing system for completing recognition of said speech query using said speech data and said data content to generate a recognized speech query; and

a web page having a list of items, at least some of said list of items being selectable by a user based on said recognized speech query;

wherein signal processing functions required to generate said recognized speech query can be allocated between a client platform and the server computing system as needed based on computing resources available to said client platform and server computing system respectively.

2. (Original) The website of claim 1, wherein said web page displays an additional list of one or more items based on said recognized speech query.
3. (Original) The website of claim 1, wherein said website is adapted so that the user can navigate and locate information of interest using said speech query.
4. (Original) The website of claim 1, wherein said list of items include products and/or services offered by said website.
5. (Original) The website of claim 1, wherein said web page is implemented in HTML or as a Java applet.
6. (Original) The website of claim 1, wherein said website is further adapted to respond to a speech query concerning said list of items by returning a text or speech articulated response.
7. (Original) The website of claim 1, wherein said website is further adapted to interact on a real-time basis in response to one or more continuous speech queries.

8. (Original) The website of claim 1, wherein said speech recognition routine can complete recognition of said speech query with less latency than would that resulting if said additional data content were generated by a client platform used by the user.
9. (Original) The website of claim 1, wherein said data content constitutes a minimum amount of information that can be used by said speech recognition engine to complete accurate recognition of words and sentences in said speech query.
10. Canceled
11. (Original) The website of claim 1, wherein the website also controls an interactive character agent presented to the user for assisting in handling said speech query.
12. (Original) The website of claim 1, wherein said list of items correspond to topics associated with an interactive lesson tutorial.

13. (Currently amended) A speech-enabled internet website operating on a server computing system and comprising:

a receiving routine executing on the server computing system for receiving speech data associated with a user speech-based query, said speech data being characterized by a first data content that is substantially inadequate by itself for permitting recognition of words articulated in said speech query; and

a speech recognition routine executing on the server computing system for completing recognition of said speech query using said speech data and said first data content to generate a recognized speech query; and

a web page having a search engine for locating user selected information of interest, said search engine using a text query that is derived from said recognized speech query;

wherein signal processing functions required to generate said recognized speech query can be allocated between a client platform and the server computing system as needed based on computing resources available to said client platform and server computing system respectively.

14. (Original) The website of claim 13, wherein said speech query is processed by more than one server computing system, so that multiple search engines are used for locating said information of interest.

15. (Original) The website of claim 13, wherein said web page includes a list of one or more items associated with assisting a user to diagnose a product or service problem, and which one or more items are also selectable by a user speech-based query.

16. (Original) The website of claim 13, wherein said website provides and controls an agent for assisting a user to interact with said website.

17. (Original) The website of claim 13, wherein said list of items correspond to topics associated with an interactive lesson tutorial.

18. (Currently Amended) A system for enabling a user web browser program to interact with a website using speech utterances, the system comprising:

a receiving routine for receiving speech data associated with a speech utterance generated at a client platform, said speech data being characterized by a limited speech data content to reduce processing and transmission latencies; and

a speech recognition routine executing on a server computing system for completing recognition of said speech utterance using said limited speech data content to generate a recognized speech query in real-time; and

a web page routine for presenting one or more web pages to the user web browser program, wherein data content for said one or more web pages perceived by the user is controlled by said recognized speech query;

wherein signal processing functions required to generate said recognized speech query can be allocated between a client platform and the server computing system as needed based on computing resources available to said client platform and server computing system respectively.

19. (Original) The system of claim 18, wherein said recognized speech query can include one of a number of predefined sentences recognizable by said system, and said speech query is recognized by identifying a candidate set of potential sentences from a number of predefined sentences, and then comparing each entry in the candidate set of potential sentences to said speech query to determine a matching recognized sentence.

20. (Original) The system of claim 18, wherein said speech utterance is processed by a natural language engine.

21. (Original) The system of claim 19, wherein said speech utterance is compared against said candidate set of potential sentences by examining noun phrases.

22. (Original) The system of claim 19, wherein said candidate set of potential sentences are determined in part by a context dictionary loaded by said sentence recognition circuit in response to an operating environment presented by said system to a user.

23. (Previously presented) The system of claim 18, wherein environment variables experienced by the user within the web browser program are used for recognizing said speech query, such that said environmental variables vary in accordance with a web page being viewed by the user or a selection within a web page made by the user.

24. (Original) The website of claim 18, wherein said list of items correspond to topics associated with an interactive lesson tutorial.

25. (Currently amended) A method of interacting with a web-connected server using a client browser program, the method comprising the steps of:
- (a) receiving speech data associated with a speech utterance articulated by a user of the client platform, said speech data being characterized by a limited speech data content to reduce processing and transmission latencies; and
 - (b) completing recognition of said speech utterance using said limited speech data content to generate a recognized speech query at the web-connected server in real-time; and
 - (c) presenting one or more web pages to the ~~user~~ client web browser program, such that data content for said one or more web pages transmitted to the client browser program is controlled by said recognized speech query;
 - (d) allocating signal processing functions required to generate said recognized speech query between a client platform and the server computing system as needed based on computing resources available to said client and server computing systems respectively.
26. (Original) A method of presenting information from a set of one or more web pages associated with a server interacting through a browser program with a client platform, the method comprising the steps of:
- (a) partially processing a speech utterance at the client platform to generate limited data content speech data, said limited data content speech data being configured to reduce processing and transmission latencies; and
 - (b) completing processing of said speech utterance using said limited speech data content to generate a recognized speech query at the server; and
 - (c) presenting content for the set of one or more web pages to the browser program, under control of said recognized speech query;
 - (d) allocating signal processing functions required to generate said recognized speech query between a client platform and the server computing system as needed based on computing resources available to said client and server computing systems respectively.

27. (New) A speech-enabled internet server computing system comprising:
- a receiving routine executing on the server computing system for receiving speech data associated with a user speech-based query, said speech data being characterized by a data content that is substantially inadequate by itself for permitting recognition of words articulated in said speech query; and
 - a speech recognition routine executing on the server computing system for completing recognition of said speech query using said speech data and said data content to generate a recognized speech query;
- wherein signal processing functions required to generate said recognized speech query can be allocated between a client platform and the server computing system as needed based on computing resources available to said client platform and server computing system respectively;
- a natural language routine executing on the server computing system and configured to process said recognized speech query to generate a natural language result in real-time;
 - a web page having a list of items, at least some of said list of items being selectable by a user based on said natural language result;
 - a database coupled to the server computing system for storing predefined answers which correspond to content for said list of items on said web page.
28. (New) The speech-enabled internet server computing system of claim 27, wherein said web page contains links to other web pages which can be selected by speech queries.
29. (New) The speech-enabled internet server computing system of claim 27, wherein said web page is a single page configured to allow a user to ask questions concerning any item identified in said database within said single page.
30. (New) The speech-enabled internet server computing system of claim 27 wherein any and all of said list of items are selectable in a single screen.
31. (New) The speech enabled internet server computing system of claim 30, wherein any and all of said list of items are selectable without scrolling through said web page.

32. (New) A speech-enabled internet server computing system comprising:
- a receiving routine executing on the server computing system for receiving speech data associated with a user speech-based query, said speech data being characterized by a data content that is substantially inadequate by itself for permitting recognition of words articulated in said speech query; and
 - a speech recognition routine executing on the server computing system for completing recognition of said speech query using said speech data and said data content to generate a recognized speech query;
- wherein signal processing functions required to generate said recognized speech query can be allocated between a client platform and the server computing system as needed based on computing resources available to said client platform and server computing system respectively;
- a natural language routine executing on the server computing system and configured to process said recognized speech query to generate a natural language result based on an analysis of a selected limited set of phrases presented in said recognized speech query;
- wherein said selected limited set of phrases are configured so that said natural language engine can generate said natural language result in real-time;
- a web page having a list of items, at least some of said list of items being selectable by a user based on said natural language result;
 - a database coupled to the server computing system for storing content pertaining to said list of items on said web page.
33. (New) The speech-enabled internet server computing system of claim 32 wherein said selected limited set of phrases include combinations of words and phrases contained in a grammar used by said speech recognition routine.
34. (New) The speech-enabled internet server computing system of claim 32 wherein said selected limited set of phrases are generated dynamically from the recognized speech query.
35. (New) The speech-enabled internet server computing system of claim 32 wherein said natural language engine compares said selected limited set of phrases to a set of phrases contained in predefined answers.
36. (New) The speech-enabled internet server computing system of claim 32 wherein said natural language engine result is a single best answer.

37. (New) A speech-enabled internet server computing system comprising:
- a receiving routine executing on the server computing system for receiving speech data associated with a user speech-based query, said speech data being characterized by a data content that is substantially inadequate by itself for permitting recognition of words articulated in said speech query; and
 - a speech recognition routine executing on the server computing system for completing recognition of said speech query using said speech data and said data content to generate a recognized speech query;
- wherein signal processing functions required to generate said recognized speech query can be allocated between a client platform and the server computing system as needed based on computing resources available to said client platform and server computing system respectively;
- a natural language routine executing on the server computing system and configured to process said recognized speech query to generate a natural language result based on an analysis of a selected limited set of phrases presented in said recognized speech query;
- wherein said selected limited set of phrases are configured so that said natural language engine can generate said natural language result and a response can be provided to said user speech-based query in real-time;
- a web page having a list of items, at least some of said list of items being selectable by a user based on said natural language result;
- a database coupled to the server computing system for storing content pertaining to said list of items on said web page;
- an electronic conversational agent adapted to interact with the user and mimic behavior of a human agent through a native language interactive real-time dialog session with the user.
38. (New) The speech-enabled internet server computing system of claim 37, wherein said electronic conversational agent is presented within a client browser.
39. (New) The speech-enabled internet server computing system of claim 37, wherein said electronic conversational agent is a visual character on a screen.
40. (New) The speech-enabled internet server computing system of claim 37, wherein said electronic conversational agent is configured to articulate suggestions to the user for appropriate speech queries.

41. (New) The speech-enabled internet server computing system of claim 37, wherein said electronic conversational agent is adapted to have configurable perception parameters which are adjusted and tailored to said content pertaining to said list of items.
42. (New) The system of claim 1 wherein respective signal processing functions to be performed by the client platform and the server computing system are specified by an initialization routine.
43. (New) The system of claim 42 wherein respective signal processing functions to be performed by the client platform and the server computing system are further specified in accordance with transmission characteristics associated with a communications channel used for said speech data.
44. (New) The system of claim 1 wherein the server computing system is adapted to handle a client platform that can include a plurality of different hand held computing devices covering a range of differing respective computing capabilities.
45. (New) The system of claim 1, wherein said speech data is formatted by a client device with at least one predetermined character used to designate end of an utterance.
46. (New) The system of claim 45, wherein said predetermined character is a NULL character.
47. (New) The system of claim 1, wherein the server computing system transfers speech related data for the web page using a hypertext transfer protocol (HTTP).
48. (New) The system of claim 1, wherein a signal processing function performed by the client platform includes generating at least partial speech observation vectors using mel frequency cepstral coefficients.
49. (New) The system of claim 1, wherein a signal processing function performed by the client platform includes at least calibrating speech and silence components of a speech utterance.
50. (New) The system of claim 1 wherein the server computing system is further configured to perform a natural language processing operation on said recognized speech query to recognize a meaning of a sentence of words contained therein.
51. (New) The system of claim 50 wherein said server computing system includes a plurality of separate natural language engines.
52. (New) The system of claim 50 wherein said natural language processing operation is configured to compare a limited set of phrases from said recognized speech query with a separate set of phrases corresponding to predefined valid queries from users.

53. (New) The system of claim 50 wherein text from said recognized speech query is presented to both a natural language engine for performing said natural language processing operation as well as to a database for identifying a meaning of said recognized speech query, such that a response can be provided by said database for at least some recognized speech queries before said natural language processing operation is completed.
54. (New) The system of claim 50, further including a database query engine which performs part of said natural language operation by combining said speech query with search predicates to retrieve from a database a set of one or more potential responsive answers to said speech query.
55. (New) The system of claim 1 wherein the server computing system is further configured to dynamically change a speech recognition grammar based on input provided by a user to selections available within said web page.
56. (New) The system of claim 55 wherein multiple speech grammars are available and selectable within the web page, and such that speech input provided by the user for an item within the web page using a first grammar dynamically controls which one of a plurality of second grammars is loaded for speech recognition of subsequent speech input by the user.
57. (New) The system of claim 55 wherein multiple speech grammars are selectable in a hierarchy within the web page, such that speech input provided by the user for an item within a first level menu of the web page using a first grammar dynamically controls which one of a plurality of second grammars at a second level menu of the web page and/or a second web page is loaded for speech recognition.
58. (New) The system of claim 1 wherein the server computing system is further configured to dynamically change a speech recognition grammar based on spoken responses provided by a user during a real-time dialogue session conducted with an interactive electronic agent associated with said web page.
59. (New) The system of claim 1, wherein said web page includes first tags which are selectable by one of a pointing device or a keyboard, and separate second tags selectable by speech input.
60. (New) The system of claim 1, wherein said web page includes tags which can be selected by a pointing device and/or a keyboard and/or speech input.

61. (New) The system of claim 1, wherein said web page and associated speech data is communicated to a client device using a hypertext transfer protocol (HTTP).
62. (New) The system of claim 1, wherein said server computing system includes text to speech capability for outputting a response associated with said web page in audible form.
63. (New) The system of claim 1, wherein said speech query is recognized by forming a concatenation of words and/or phrases derived from said speech query and using said concatenation as a search query for a database.
64. (New) The system of claim 11, wherein said interactive character agent provides suggestions for queries which the user can articulate.
65. (New) The system of claim 11, wherein a different interactive character agent can be presented to different users providing speech utterances received by the server computing system.
66. (New) The system of claim 11, wherein said interactive character agent is configured to perform a dialog of successive questions and answers with the user during an interactive session.
67. (New) The system of claim 11, wherein said server computing system causes said interactive character agent to respond in real-time whenever the user provides selected speech input.
68. (New) The system of claim 1, wherein the user can speak a help command while interacting with any web page maintained by the server computing system to cause an interactive character agent to appear.
69. (New) The system of claim 18, wherein said limited speech data content does not include complete speech observation vectors which must be derived from said limited speech data content and input to said speech recognition routine before said speech utterance can be recognized.
70. (New) The system of claim 18 wherein said limited speech data content comprises speech data that is transmitted continuously while the user is speaking and until silence is detected.
71. (New) The method of claim 25 further including a step: performing a natural language processing operation to compare a limited set of phrases extracted from said recognized

- speech query with a separate set of phrases extracted from predefined valid queries from users.
72. (New) The method of claim 25 further including a step: providing an interactive electronic character who provides suggestions for queries which the user can articulate.
 73. (New) The system of claim 72, further including a step: configuring said interactive character agent to engage in a dialog of successive questions and answers with the user during an interactive session.
 74. (New) The method of claim 25, further including a step: presenting an interactive character agent to the user in real-time in response to a spoken help command presented while interacting with any web page maintained by the server computing system.
 75. (New) The method of claim 25, further including a step: configuring said web page as a single page to a browser to allow a user to ask questions concerning any item identified in said database within said single page.
 76. (New) The method of claim 25, further including a step: forming a concatenation of words and/or phrases derived from said speech query and using said concatenation as a search query for a database.
 77. (New) The method of claim 26, wherein said limited speech data content does not include complete speech observation vectors which must be derived from said limited speech data content and input to said speech recognition routine before said speech utterance can be recognized.
 78. (New) The method of claim 26, wherein the server computing system transfers speech related data for the web page using a hypertext transfer protocol (HTTP).
 79. (New) The method of claim 26 further including a step: dynamically changing a speech recognition grammar based on input provided by a user to selections available within said web page.